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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/640,684	08/18/2000	Eiji Ogawa	Q58695	7102

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EXAMINER	-
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AMINI, JAVID A

ART UNIT	PAPER NUMBER
2672	

19

DATE MAILED: 10/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

09/640,684

Applicant(s)

OGAWA, EIJI

Examiner

Javid A Amini

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,8-11,15-18,22-25 is/are rejected.
- 7) ☒ Claim(s) 5-7,12-14,19-21 and 26-28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Sep. 09, 2003 has been entered.

***Allowable Subject Matter***

**1. Claims 3-7, 10-14, 17-21 and 24-28.**

Claims 3-7, 10-14, 17-21 and 24-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form the combination of all mentioned claims (3-7, 10-14, 17-21 and 24-28) including all of the limitations of the base claim and any intervening claims.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-4, 10-11, 15, 17-18 and 24-25 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation of  $S_{\max}$  for boundary value of  $S_a$  on page 2, lines 14-18, in claim 1, repeated in claims 3-4 and 10-11.

The limitation of  $S_{\max}$  for boundary value of  $S_a$  on page 7, lines 8-12, in claim 15, repeated in claims 17-18 and 24-25.

Claims 1 and 15 recite the limitation "signal value". There is insufficient antecedent basis for this limitation in the claim. The limitations are not clear because an interval of any signal can be characterized as low signal value/intermediate/high signal value (value can be amplitude, log value, power, and etc.), therefore the low signal value is smaller than the intermediate and high segment of that signal. The inventor should describe and specify the limitations of claims 1 and 15 more clearly.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**2. Claims 1-2, 8-9, 15-16 and 22-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Neitzel et al. (hereinafter referred as Neitzel), and further in view of Yamazaki et al. (hereinafter referred as Yamazaki).**

**3. Claim 1.**

As per claim 1, "An image display method, which has an output brightness characteristic in which a logarithmic value of an output brightness becomes smaller as a value of an input image signal becomes larger, for displaying a visible image that said input image signal represents according to said output brightness characteristic, the image display method comprising the step of: setting said output brightness characteristic so that a rate of change, which represents a change in a logarithmic value of said output brightness with respect to a change in said input

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image signal value, in a low signal value region of said image signal becomes smaller than that in an intermediate and high signal value region of said input image signal; wherein a boundary value  $S_a$  between the low signal value region and the intermediate and high signal value region is represented by the following equation:

$$0.05 \times S_{\max} \leq S_a \leq 0.30 \times S_{\max}$$

Where  $S_{\max}$  is the maximum value of the image signal in the output brightness characteristic.”, Neitzel et al. hereinafter Neitzel discloses in (col. 5, lines 65-67 and col. 6, lines 1-4) that the individual data words of the data set are corrected and subjected to a logarithmic transformation (block 9), preferably by means of a look-up table, in conformity with the formula  $E = \log D/D_0$ , where  $D_0$  is a reference does which is derived in known manner from the contents of the image, for example by histogram analysis. Neitzel dose not explicitly specify the boundary conditions (for low and high value of x and y-axis) or (for a low signal value region and an intermediate and high signal value region of image signal). Yamazaki et al. (Hereinafter referred as Yamazaki) in col. 6, lines 1-50 teaches the boundary conditions and the threshold values.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamazaki into Neitzel because Neitzel discloses a method in (col. 10, lines 59-60) that is only essential that the small image structures (low signal value) have a smaller dynamic range than the large image structures (high signal value) and Yamazaki illustrates in Fig. 11 the voltage of device as increase the brightness (luminance) increase.

The transformation functions required for this purpose can always be derived from the preset contrast and density functions. The user can thus directly preset the contrast and density (or brightness) of the image, Neitzel (col. 3, lines 1-6).

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4. Claim 2.

As per claim 2, “wherein said output brightness characteristic is approximately linear over approximately the entire intermediate and high signal value region”, Neitzel teaches in (col. 8, lines 47-48) that a visible image whose density (brightness) is linearly dependent on the output image values A (high signal value). Also, Yamazaki in col. 1, lines 66-67; col. 6, lines 1-46, discloses the threshold setting. Also in Fig. 7, illustrates output characteristic.

5. Claim 8.

As per claim 8, “wherein said output brightness characteristic is set so that said change rate in the high signal value region of said image signal becomes greater than that in the intermediate signal value region of said image signal”, Neitzel teaches in (col. 10, lines 59-60) that is only essential that the small image structures (low signal value) have a smaller dynamic range than the large image structures (high signal value/brightness characteristic). Also, Yamazaki in Fig. 29 illustrates the change rate in the high signal become greater than a set voltage.

6. Claim 9.

As per claim 9, “wherein said output brightness characteristic is approximately linear over approximately the entire intermediate signal value region and over approximately the entire high signal value region”, Neitzel teaches in (col. 8, lines 47-48) that a visible image whose density (brightness) is linearly dependent on the output image values A (high signal value).

Also, Yamazaki in col. 1, lines 66-67; col. 6, lines 1-46, discloses the threshold setting. Also in Fig. 7, illustrates output characteristic.

7. Claim 15.

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As per claim 15, "In an image display unit, which comprises a brightness circuit having an output brightness characteristic in which a logarithmic value of an output brightness becomes smaller as a value of an input image signal becomes larger, for displaying a visible image that said input image signal represents according to said output brightness characteristic, the improvement wherein said output brightness characteristic in said brightness circuit is set so that a rate of change, which represents a change in the logarithmic value of said output brightness with respect to a change in said input image signal value, in a low signal value region of said image signal becomes smaller than that in an intermediate and high signal value region of said input image signal; wherein a boundary value  $S_a$  between the low signal value region and the intermediate and high signal value region is represented by the following equation:

$$0.05 \times S_{\max} \leq S_a \leq 0.30 \times S_{\max}$$

Where  $S_{\max}$  is the maximum value of the image signal in the output brightness characteristic. ", Neitzel et al. hereinafter Neitzel discloses in (col. 5, lines 65-67 and col. 6, lines 1-4) that the individual data words of the data set are corrected and subjected to a logarithmic transformation (block 9), preferably by means of a look-up table, in conformity with the formula  $E = \log D/D_0$ , where  $D_0$  is a reference does which is derived in known manner from the contents of the image, for example by histogram analysis. Neitzel dose not explicitly specify the boundary conditions (for low and high value of x and y-axis) or (for a low signal value region and an intermediate and high signal value region of image signal). Yamazaki et al. (Hereinafter referred as Yamazaki) in col. 6, lines 1-50 teaches the boundary conditions and the threshold values.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamazaki into Neitzel because Neitzel discloses a method in

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(col. 10, lines 59-60) that is only essential that the small image structures (low signal value) have a smaller dynamic range than the large image structures (high signal value) and Yamazaki illustrates in Fig. 11 the voltage of device as increase the brightness (luminance) increase.

The transformation functions required for this purpose can always be derived from the preset contrast and density functions. The user can thus directly preset the contrast and density (or brightness) of the image, Neitzel (col. 3, lines 1-6).

8. Claim 16.

As per claim 16, "wherein said output brightness characteristic in said brightness circuit is approximately linear over approximately the entire intermediate and high signal value region", Neitzel teaches in (col. 8, lines 47-48) that a visible image whose density (brightness) is linearly dependent on the output image values A (high signal value). Also, Yamazaki in col. 1, lines 66-67; col. 6, lines 1-46, discloses the threshold setting. Also in Fig. 7, illustrates output characteristic.

9. Claim 22.

As per claim 22, "wherein said output brightness characteristic in said brightness circuit is set so that said change rate in the high signal value region of said image signal becomes larger than that in the intermediate signal value region of said image signal", Neitzel teaches in (col. 10, lines 59-60) that is only essential that the small image structures (low signal value) have a smaller dynamic range than the large image structures (high signal value/brightness characteristic). Also, Yamazaki in Fig. 29 illustrates the change rate in the high signal become greater than a set voltage.

10. Claim 23.



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As per claim 23, "wherein said output brightness characteristic in said brightness circuit is approximately linear over approximately the entire intermediate signal value region and over approximately the entire high signal value region", Neitzel teaches in (col. 8, lines 47-48) that a visible image whose density (brightness) is linearly dependent on the output image values A (high signal value). Also, Yamazaki in col. 1, lines 66-67; col. 6, lines 1-46, discloses the threshold setting. Also in Fig. 7, illustrates output characteristic.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Javid A Amini whose telephone number is 703-605-4248. The examiner can normally be reached on 8-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Javid A Amini  
Examiner  
Art Unit 2672

Javid Amini

*Jeffery A. Brien*  
JEFFERY BRIEN  
PRIMARY EXAMINER